

United States Department of the Interior  
National Park Service

## National Register of Historic Places Registration Form

### 1. Name of Property

Historic name: N/A

Other name/site number: Robidoux Creek Pratt Truss Bridge (preferred); 58-LT-104; 19.2 -T

2. Location On Sunflower Road, 0.8 miles west of the intersection with 21<sup>st</sup> Road; approximately 1.5 miles north and 1.5 miles west of the town of Frankfort.

city or town Frankfort not for publication  
X vicinity

state code KS county Marshall county code 117 zip code 66427

### 3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this XX nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property XX meets does not meet the National Register criteria. I recommend that this property be considered significant nationally XX statewide locally. (See continuation sheet for additional comments.)

Richard D. Penkutz  
Signature of certifying official

4-09-03  
Date

### KANSAS STATE HISTORICAL SOCIETY

State or Federal agency and bureau

In my opinion, the property meets does not meet the National Register criteria.  
(See continuation sheet for additional comments.)

Signature of commenting or other official

Date

State or Federal agency and bureau

### 4. National Park Service Certification

I, hereby, certify that this property is:

- entered in the National Register.  
See continuation sheet  
determined eligible for the National Register.  
See continuation sheet  
determined not eligible for the National Register.  
removed from the National Register.  
other, (explain:)

Signature of Keeper

Date of Action

Property Name Robidoux Creek Pratt Truss BridgeCounty and State Marshall, KansasPage 2**5. Classification**

## Ownership of Property

☐ private  
☒ public-local  
☐ public-State  
☐ public-Federal

## Category of Property

☐ building(s)  
☐ district  
☐ site  
☒ structure  
☐ object

## No. of Resources within Property

contributing	noncontributing
<input type="checkbox"/>	<input type="checkbox"/> buildings
<input type="checkbox"/>	<input type="checkbox"/> sites
<u>1</u>	<input type="checkbox"/> structures
<input type="checkbox"/>	<input type="checkbox"/> objects
<u>1</u>	<u>0</u> Total

Name of related multiple property listing:  
(Enter "N/A" if property is not part of a  
multiple property listing.):

Metal Truss Bridges in Kansas

No. of contributing resources previously  
listed in the National Register

0**6. Functions or Use**

## Historic Functions

(Enter categories from instructions.)

TRANSPORTATION: Road-related (vehicular)

## Current Functions

(Enter categories from instructions.)

TRANSPORTATION: Road-related (vehicular)**7. Description**

## Architectural Classification

(Enter categories from instructions.)

OTHER: Pratt Truss

## Materials

(Enter categories from instructions.)

Foundation WoodWalls Roof Other Metal: Iron, Steel

Narrative Description (Describe the historic and current condition of the property on one or more  
continuation sheets.)

Property Name Robidoux Creek Pratt Truss BridgeCounty and State Marshall, KansasPage 3**8. Statement of Significance**

Applicable National Register Criteria (Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- ☐ A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- ☐ B Property is associated with the lives of persons significant in our past.
- ☒ C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ☐ D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations (Mark "x" in all the boxes that apply.)

- ☐ A owned by a religious institution or used for religious purposes.
- ☐ B removed from its original location.
- ☐ C a birthplace or a grave.
- ☐ D a cemetery.
- ☐ E a reconstructed building, object, or structure.
- ☐ F a commemorative property.
- ☐ G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance  
Enter categories from instructions.)ENGINEERINGTRANSPORTATION

Period of Significance

1910

Significant Dates

1910

Cultural Affiliation

N/A

Significant Person

N/A

Architect/Builder

King Bridge Company (Cleveland, Ohio)

Narrative Description (Describe the historic and current condition of the property on one or more continuation sheets.)



Property Name Robidoux Creek Pratt Truss BridgeCounty and State Marshall, KansasPage 4**9. Major Bibliographical References**

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

☐ preliminary determination of individual listing  
(36 CFR 67) has been requested

☐ previously listed in the National Register

☐ previously determined eligible by the National Register

☐ designated a National Historic Landmark

☐ recorded by Historic American Buildings  
Survey #                     

☐ recorded by Historic American Engineering

Primary location of additional data:

☒ State Historic Preservation Office

☐ Other State agency

☐ Federal agency

☒ Local government

☐ University

☐ Other

Specify repository:

Record #                     **10. Geographical Data**Acreage of property <1 acre

UTM References

1	<u>1/4</u>	<u>7/1/9/3/6/0</u>	<u>4/4/0/0/2/4/0</u>	3	<u>/</u>	<u>/ / / / /</u>	<u>/ / / / /</u>
	Zone	Easting	Northing		Zone	Easting	Northing
2	<u>/</u>	<u>/ / / / /</u>	<u>/ / / / /</u>	4	<u>/</u>	<u>/ / / / /</u>	<u>/ / / / /</u>

     See continuation sheet

Verbal Boundary Description (Describe the boundaries of the property on a continuation sheet.)

Boundary Justification (Explain why the boundaries were selected on a continuation sheet.)

**11. Form Prepared By**name/title Kerry Davis, Architectural Historian & Elizabeth Rosin, Partnerorganization Historic Preservation Services date August 5, 2002street & number 323 West Eighth Street, Suite 112 telephone (816) 221-5133city or town Kansas City state Missouri zip code 64105**Additional Documentation**

Submit the following items with the completed form:

Continuation Sheets

Maps

A USGS map (7.5 or 15 minute series) indicating the property's location.

A sketch map for historic districts and properties having large acreage or numerous resources.

Photographs

Representative black-and-white photographs of the property.

Additional items (Check with the SHPO or FPO for any additional items.)

**Property Owners** (Complete this item at the request of the SHPO or FPO.)Name County of Marshallstreet & number 1201 Broadway, Room B1 telephone 785-562-5349city or town Marysville state KS zip code 66508

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**NATIONAL REGISTER OF HISTORIC PLACES  
CONTINUATION SHEET**

Section Number 7 Page 1

Robidoux Creek Pratt Truss Bridge  
Marshall County, Kansas

**DESCRIPTION**

**LOCATION AND SETTING**

The Robidoux Creek Pratt Truss Bridge is located 1.5 miles north and 1.5 miles west of the town of Frankfort in north-central Kansas, on the east-west section line between the SW ¼ of Section 5 and the NW ¼ of Section 8, Township 4S, Range 9E. The region is defined by rounded hills and broad, tree-lined valleys. The Robidoux Creek Pratt Truss Bridge carries Sunflower Road across Robidoux Creek, a swift, wide branch of the Black Vermillion River. The dirt roadway, flanked by cultivated fields, aligns in a shallow S-shaped curve with the Robidoux Creek Pratt Truss Bridge.

**TRUSS TYPE**

The Robidoux Creek Pratt Truss Bridge consists of a pin-connected pony truss<sup>1</sup> that measures 71 feet in length flanked by inclined timber approach spans on each end. The west approach span is 23 feet long and the east approach span is 18 feet long. The deck is 16 feet wide. Short timber abutments support the outer ends of the approach spans. A system of three steel I-beam posts and diagonal angle stock bracing forms the piers that support the end floor beams of the truss and the inner ends of the approach spans.

The inclined end posts rise from the bottom chords and meet the horizontal top chords to form a trapezoidal shape. The top chords and end posts consist of two channels, cover plates, and stay plates; the bottom chords consist of paired flat eye bars.

The web members consist of vertical posts that form four equivalent panels and diagonal ties that intersect within the two central panels. Angle stock and lacing bars compose the vertical posts. Tension rods and eye bars compose the diagonal ties. Angle buttress posts located at each vertical post are composed of angle stock.

The timber deck is 16 feet wide and rises 21½ feet above the creek bed on timber stringers. Pentagonal floor beams located at the base of each vertical post are connected by lower lateral bracing rods.

A broken cast-iron plaque on the southwest inclined end post has letters in relief that read "[BUILT / BY] / KING / BRIDGE / CO / CLEVELAND." Letters in relief read "PHONIX [sic] IRON CO / PHILADA PA" and "JONES & LAUGHLIN" on several structural members.

**INTEGRITY**

The Robidoux Creek Pratt Truss Bridge is an excellent example of this bridge type, historically the most popular in Kansas.<sup>2</sup> With no apparent alterations to the original design or materials, the Robidoux Creek Pratt Truss Bridge retains a high degree of integrity. The original workmanship, materials, design, setting, and feeling of the property are readily apparent. Furthermore, the potential for preservation of the bridge is high. Located on a lightly traveled road, it is unlikely that traffic requirements will necessitate alteration or replacement.

<sup>1</sup> A pony truss is also referred to as a low truss.

<sup>2</sup> Larry Jochims, *Metal Truss Bridges in Kansas 1861-1939, National Register of Historic Places Multiple Property Documentation Form*, (Topeka: Kansas State Historical Society, 1989), E1. Jochims stated there were approximately 262 extant Pratt trusses in Kansas. Dale Nimz, *Activity III Review Initial Assessment Metal Truss Bridges*, (Topeka: Kansas State Historical Society, 1998), 6. Nimz stated there were approximately 800 extant Pratt trusses in Kansas.

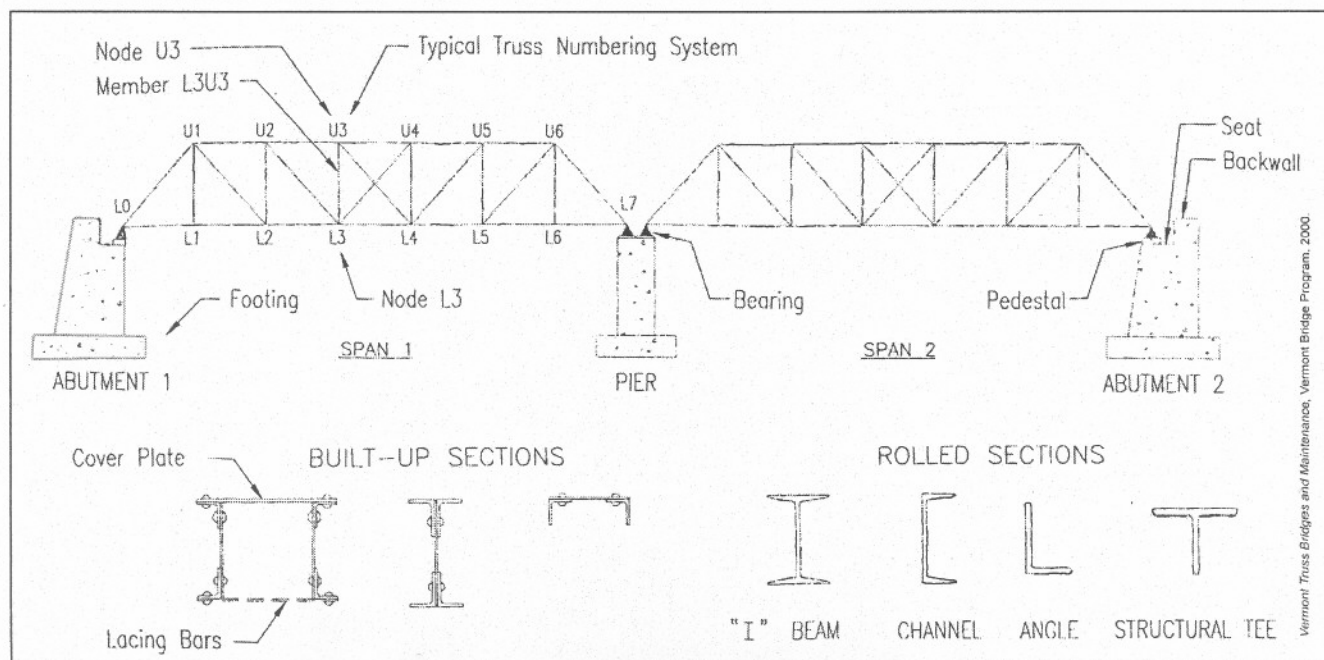
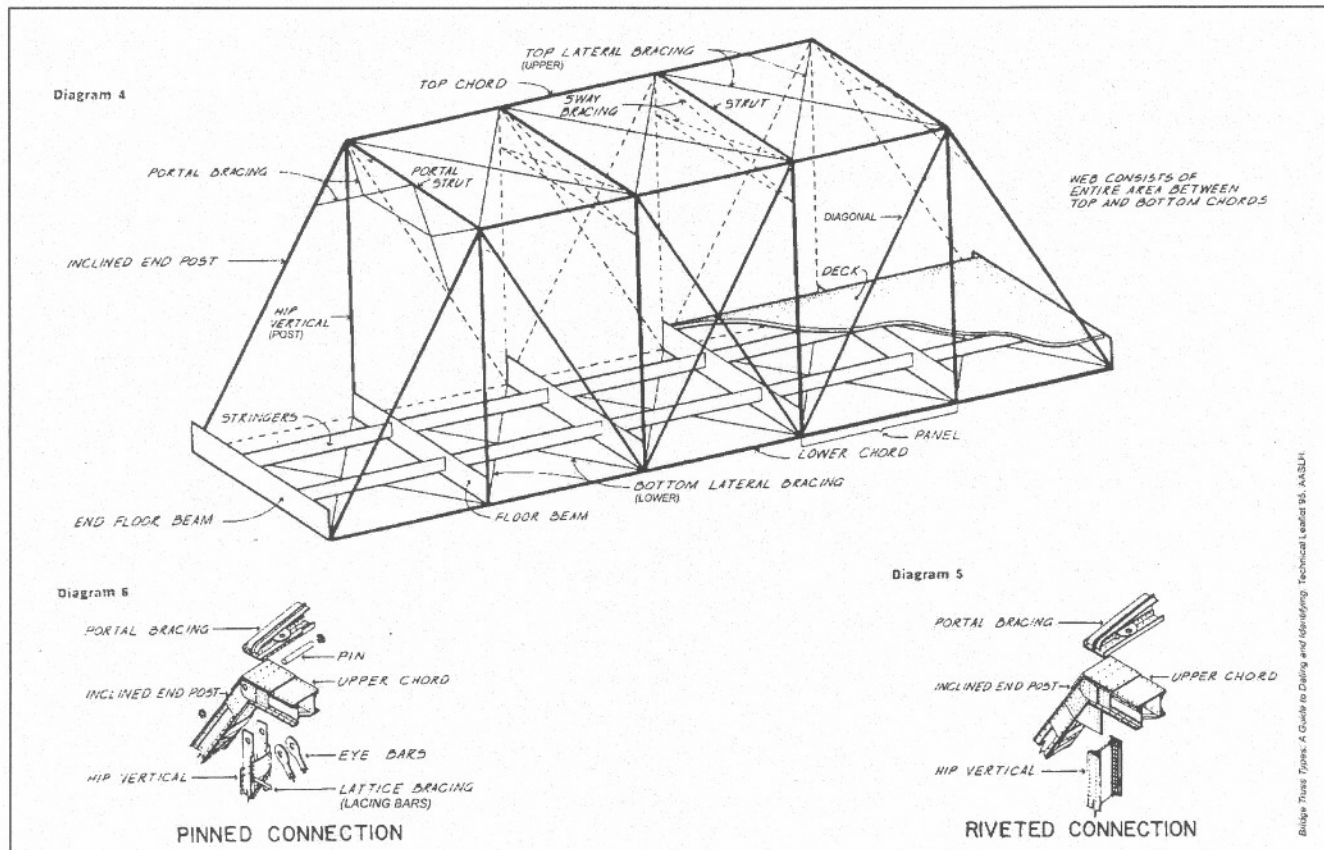
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Robidoux Creek Pratt Truss Bridge  
Marshall County, Kansas

**TRUSS TERMINOLOGY**





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Robidoux Creek Pratt Truss Bridge  
Marshall County, Kansas

**STATEMENT OF SIGNIFICANCE**

The Robidoux Creek Pratt Truss Bridge is significant under National Register Criterion C in the areas of Engineering and Transportation. As defined by the *Multiple Property Documentation Form for Metal Truss Bridges in Kansas*, it is an excellent example of the Pratt truss bridge type. Built in 1910,<sup>1</sup> the Robidoux Creek Pratt Truss Bridge represents a common, economical bridge solution applied to a relatively long span. Its pin-connected construction and timber abutments are comparatively late examples and illustrate the transition in construction techniques and materials that occurred during the period of significance. As no historic name identifies this bridge, the preferred name "Robidoux Creek Pratt Truss Bridge" has been assigned. This describes the location, design, and function of the structure.

The need for all-weather crossings of rivers and streams corresponded to the growth of the market economy across Kansas during the late nineteenth and early twentieth centuries. Bridges provided farmers easy access to markets and could make the difference between growth and stagnation for the many small, young communities across the state.<sup>2</sup> Proximity to a bridge often secured a town's economic stability, and it contributed to a local sense of modernity.

Prior to the 1930s, the railroad was the primary means of long-distance travel, and there was little need for roads to extend more than a few dozen miles. With little stimulus for improving roads that would cross multiple jurisdictions, road construction and maintenance remained local concerns. County commissioners often carried the burden of selecting bridge locations, over which much contention was common.

The range of choices for bridge designs and companies was vast. Many of the larger bridge companies sold metal truss bridges through mail order catalogues. County commissioners could simply specify the span, clearance needs, and truss type (if there was a preference), then choose the lowest bidder from the numerous competing companies that had salesmen in the field.

By the late nineteenth century, fabrication of iron and steel was widespread. The speed of construction and the relatively low cost of metal truss bridge parts ensured their popularity over labor-intensive masonry bridges and short-lived timber bridges. Toward the end of the nineteenth century, the quality, quantity, and cost of steel improved to such a degree that it virtually replaced wrought iron for bridge construction by 1910.<sup>3</sup>

Most metal trusses were constructed of built-up members composed of mass-produced, standard-shaped channel, plate, and angle stock purchased from one or more of the numerous steel companies nationwide. The bridge companies preassembled trusses in their factories then simply shipped them to the bridge site for installation. Installation involved grading approaches, constructing abutments and piers, erecting preassembled floor and truss members, and placing deck material.

<sup>1</sup> *Kansas Historic Bridge Rating System*, Kansas Department of Transportation, 1980-1983.

<sup>2</sup> Jochims, E.

<sup>3</sup> *Ibid*, F.

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Robidoux Creek Pratt Truss Bridge  
Marshall County, Kansas

Before 1900, generally all panel point connections – the locations at which structural bridge elements intersect – were made with the use of a pin. This technique was so widespread that it became one of the distinctive features of American bridge construction in the nineteenth century.<sup>4</sup> However, subsequent advancements in pneumatic riveting techniques greatly improved rivet installation quality, enabling more reliable panel point connections. With the increased portability of this construction technology, the more rigid riveting technique rapidly surpassed pin-connected bridge construction during the first years of the twentieth century. The pin-connected construction of the Robidoux Creek Pratt Truss Bridge is a late example of this once standard technique.

In addition, the contemporary development of economic cement production promoted the widespread combination of steel and concrete in bridge construction. It was not uncommon for older metal truss bridges to receive new reinforced concrete decks or poured concrete reinforcements for older stone abutments. By the 1920s, reinforced concrete was the standard material for abutments, piers, and decks of steel truss bridges. The lack of poured concrete elements at the Robidoux Creek Pratt Truss Bridge is typical for bridges built early in this period.

The Robidoux Creek Pratt Truss Bridge is a classic example of this truss design. Patented in 1844, the Pratt truss incorporates vertical members in compression and diagonal members in tension, a design that reduces the required length of compression members, helping to prevent bending or buckling.<sup>5</sup> The Pratt truss became the most common bridge type of the late nineteenth and early twentieth centuries and spawned numerous variations including Parker, Camelback, Baltimore, Truss Leg Bedstead, Lenticular, and Pennsylvania trusses.<sup>6</sup>

In Kansas, Pratt truss bridges were constructed well into the twentieth century, suggesting the appeal of the design's strength and economical construction costs.<sup>7</sup> In 1998, approximately 800 Pratt truss bridges, including the Robidoux Creek Pratt Truss Bridge, existed throughout the state of Kansas.<sup>8</sup>

**STRUCTURE HISTORY**

Originally called Frank's Ford, the nearby town of Frankfort was organized during the summer of 1867.<sup>9</sup> A few months later, the Union Pacific Railroad established a station stop in Frankfort to serve its Central Branch. By the early 1880s, the region was "acknowledged as the richest agricultural part of the county, and [Frankfort was] surrounded by a wealthy class of farmers" that supported the town's commercial growth.<sup>10</sup> Frankfort was the third leading city in the county at the time, boasting several general merchandise stores, a newspaper, a post

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<sup>4</sup> Ibid, F.

<sup>5</sup> T. Allan Comp and Donald Jackson, *Bridge Truss Types: A guide to dating and identifying*. (Nashville: American Association for State and Local History, Technical Leaflet 95), 8.

<sup>6</sup> Ibid.

<sup>7</sup> Jochims, F2

<sup>8</sup> Nimz, 6.

<sup>9</sup> "History of Frankfort Kansas, The," *Marshall County* [article on-line]; available from <http://www.kansas.net/~ctyfmrkf/history/history.html>; Internet; accessed 20 June 2002.

<sup>10</sup> William G. Cutler, *History of the State of Kansas: Marshall County*. (Chicago: A. T. Andreas, 1883).



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Robidoux Creek Pratt Truss Bridge  
Marshall County, Kansas

office, a "first-class" hotel, a bank, a water-powered grist mill, a lumber yard, and two steam elevators.<sup>11</sup> Typical of small towns throughout Kansas, it served as a trading and shipping point for the surrounding rural community. As a result, fords and bridges that provided area farmers with access to local markets were critical to the survival of the regional economy.

The King Bridge Company, a prolific out-of-state bridge builder from Cleveland, Ohio, constructed the Robidoux Creek Pratt Truss Bridge in 1910.<sup>12</sup> Markings on the structural members indicate that the King Bridge Company purchased the stock metal from both the Jones & Laughlins Steel Corporation of Pittsburgh, Pennsylvania and the Phoenix Iron Company of Philadelphia, Pennsylvania. No further construction history has presently been located.<sup>13</sup>

Founded by Zenas King in 1858, the King Bridge Company claimed to have produced over 5,000 bridges throughout North America by the late 1800s.<sup>14</sup> In an effort to capitalize on America's expansion west, the company established a plant in Iola, Kansas in 1871, moving a year later to Topeka. From this location, the company constructed nearly 100 structures in Kansas, Minnesota, Nebraska, Iowa, and Arkansas within two years. Edwin I. Farnsworth served as chief engineer for the King Bridge Company's operations in Kansas. He later became a co-founder of Missouri Valley Bridge and Iron Company and subsequently chief engineer of Kansas City Bridge and Iron Company.<sup>15</sup>

By the end of 1873, the King Bridge Company closed both Kansas plants and pursued the western market from a sales office in Des Moines, Iowa.<sup>16</sup> The King Bridge Company continued to manufacture bridges until the mid-1920s under the management of Zenas King's sons, James A. King and Harry W. King, and his grandson, Norman C. King.

In 1933, the *Marshall County News* reported that Marshall County featured more bridges than any other county in the state of Kansas. In addition, the Marshall County engineer and staff reportedly inspected each bridge annually and the county's bridge bill the previous year totaled \$54,033.15.<sup>17</sup>

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<sup>11</sup> Ibid.

<sup>12</sup> A plaque affixed to the bridge identifies the King Bridge Company; the Kansas Department of Transportation records indicate the date of construction.

<sup>13</sup> Inquiry into the Marshall County Road and Bridge records, Kansas Department of Transportation records, Kansas State Historical Society archives, Marshall County Historical Society, and *Western Contractor* revealed no further construction history specific to the Robidoux Creek Pratt Truss Bridge.

<sup>14</sup> "Short History of the King Bridge Company," *The King Bridge Company Museum* [article on-line]; available from <http://www.kingbridgeco.com>; Internet; accessed 20 June 2002.

<sup>15</sup> Jochims, E3.

<sup>16</sup> "Short History of the King Bridge Company," *The King Bridge Company Museum*.

<sup>17</sup> "Crossings and Fords[:] Blue Bridge Forerunners," *Marshall County News*, 1 September 1933.

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Robidoux Creek Pratt Truss Bridge  
Marshall County, Kansas

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*Historic Highway Bridges in Pennsylvania*. Harrisburg: Pennsylvania Department of Transportation and Pennsylvania Historical and Museum Commission, 1986.

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Robidoux Creek Pratt Truss Bridge  
Marshall County, Kansas

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**GEOGRAPHICAL DATA**

**Verbal Boundary Description:**

Located on the line between the NW  $\frac{1}{4}$  of Section 8 and the SW  $\frac{1}{4}$  of Section 5, Township 4S, Range 9E, the Robidoux Creek Pratt Truss Bridge encompasses an area measuring approximately 112 feet by 16 feet. The northwest corner of this area corresponds to the northwest corner of the bridge.

**Boundary Justification:**

The boundary includes the truss, deck, abutments, and associated approaches that represent the significant features associated with the bridge structure.



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Section - Photographic Documentation Page 8

Robidoux Creek Pratt Truss Bridge  
Marshall County, Kansas

**PHOTO LOG**

Photographer: Kerry Davis  
Date of Photographs: May 2002  
Location of Original Negative: Kansas State Historical Society, Topeka, Kansas

Photograph Number	Camera View
1.	View W, bridge truss and deck
2.	View NE, bridge truss and understructure
3.	View E, bridge truss and roadway
4.	View NW, bridge understructure and west pier
5.	View SW, bridge understructure and west pier
6.	View SW, angle buttress and lower node detail
7.	View E, plaque detail

